

## 4.4 Exercises



1. **WRITING** How can you use a coordinate plane to draw a polygon?

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2. **WRITING** How can you find the perimeter of a rectangle in a coordinate plane?

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**Draw the polygon with the given vertices in a coordinate plane.**

8.  $G\left(1\frac{1}{2}, 4\right), H\left(1\frac{1}{2}, 8\right), J(5, 8), K(5, 4)$

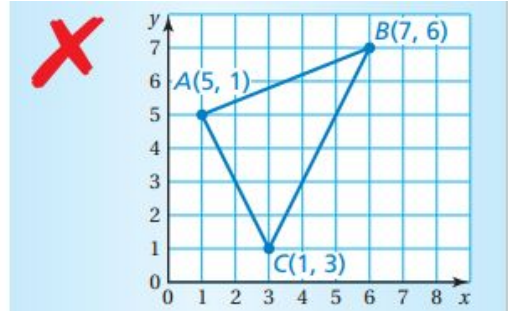
10.  $Q(0, 4), R(10, 8), S(7, 4), T(10, 2), U(5, 0)$

Find the perimeter and the area of the polygon with the given vertices.

12.  $C(1, 1), D(1, 4), E(4, 4), F(4, 1)$

14.  $N(0, 2), P(5, 2), Q(5, 5), R(0, 5)$

16. **ERROR ANALYSIS** Describe and correct the error in drawing a triangle with vertices  $A(5, 1), B(7, 6)$ , and  $C(1, 3)$ .



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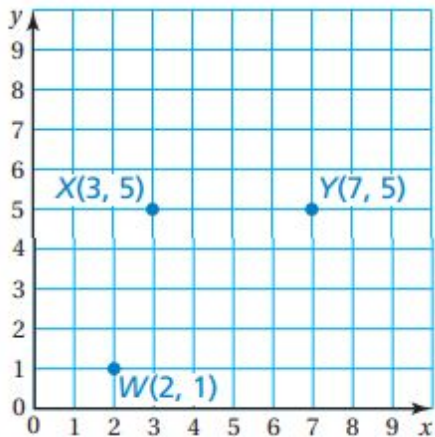
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**OPEN-ENDED** Draw a polygon with the given conditions in a coordinate plane.

18. a square with a perimeter of 20 units

20. a rectangle with an area of 24 units<sup>2</sup>

22. **STRUCTURE** The coordinate plane shows three vertices of a parallelogram. Find two possible points that could represent the fourth vertex.



24. **CITY LIMITS** In a topographical map of a city, the vertices of the city limits are  $A(10, 9)$ ,  $B(18, 9)$ ,  $C(18, 2)$ ,  $D(14, 4.5)$ , and  $E(10, 4.5)$ . The coordinates are measured in miles. What is the area of the city?
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25. **BACKYARD** The vertices of a backyard are  $W(10, 30)$ ,  $X(10, 100)$ ,  $Y(110, 100)$ , and  $Z(50, 30)$ . The coordinates are measured in feet. The line segment  $XZ$  separates the backyard into a lawn and a garden. The area of the lawn is greater than the area of the garden. How many times larger is the lawn than the garden?
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26. **Precision** The vertices of a rectangle are  $(1, 0)$ ,  $(1, a)$ ,  $(5, a)$ , and  $(5, 0)$ . The vertices of a parallelogram are  $(1, 0)$ ,  $(2, b)$ ,  $(6, b)$ , and  $(5, 0)$ . The value of  $a$  is greater than the value of  $b$ . Which polygon has a greater area? Explain your reasoning.

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### Fair Game Review

What you learned in previous grades & lessons

Divide. Write the answer in simplest form. (Section 2.3)

27.  $1\frac{1}{3} \div \frac{2}{3}$

28.  $6\frac{3}{5} \div \frac{3}{4}$

29.  $2\frac{1}{2} \div 8$

30.  $4\frac{1}{6} \div 1\frac{1}{8}$

31. **MULTIPLE CHOICE** You are filling bottles from 5 gallons of lemonade.

How many bottles can you fill when each bottle is  $\frac{3}{8}$  of a gallon? (Section 2.2)

(A)  $1\frac{7}{8}$

(B) 3

(C) 8

(D)  $13\frac{1}{3}$

27. \_\_\_\_\_

28. \_\_\_\_\_

29. \_\_\_\_\_

30. \_\_\_\_\_



